These are some notes from the **NCEP / EMC Global Climate and Weather Modeling Branch's** bi-weekly briefings for February 2005. The individual meeting notes may be viewed at *http://www.emc.ncep.noaa.gov/gmb/KENS_PLACE/Glob_MapBrief*

New GFS model:

See the Branch's 'Parallel' web site
http://www.emc.ncep.noaa.gov/gmb/para/parahome.html

There are concerns about the new forecast system. Forecasts with the new T382 model are acting differently than the operational T254; negatively in the Southern Hemisphere. A set of 24 hour forecasts (1-14 Dec 2004) have been extensively compared with forecasts using changes to the analysis procedures, but impacts of changes are small. More testing of the various new model features is ongoing.

New GFS land surface parameterization:

Testing new vegetation fraction climatology shows little impact at 500mb, while comparison with radiosonde observations shows mixed results in the lower atmosphere. We are also making use of the regional model's forecast verification system (FVS) to investigate differences in the operational and new global model near-surface output. The 2-meter temperatures cool too much in the new model tests.

Moisture Verification:

We are using GDAS (analysis) data as 'truth' to validate relative humidity and, in the future, precipitable water. Bias, correlation, and RMSE seem reasonable through forecast day 3, with correlations higher in northern hemisphere.

Ensembles Forecasting:

Tests are being conducted to investigate impact of:

- increased horizontal resolution,
- doubling the number of ensemble members,
- changing the 'breeding' cycle to 6 hrs rather than 24 hrs.

The new ensemble mean has improved 500 anomaly correlations, with a better RMS height error (primarily northern hemisphere).

Statistical post-processing of ensemble data has been run for Spring/Summer 2004 with the current operational setup and an older, more coarsely resolved model. The latter system was developed at the Climate Diagnostics Center and is being used for NCEP's Week2 forecast. Through the 1st 10 days, ensemble forecasts using the higher resolution operational scheme were better than the forecasts from the older model at 500mb. Bias corrections from a 25-year climatology add value to the probability forecasts.